

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Serial No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name	
PO038311	ACI001-VC	3	1	Net 30	M1018A3.000W.250	1018 Angle 3.00" X0.250" Wall MATERIAL: ANGLE 44W ACCEPTABLE				20	11/14/2017	20		S009407	Stock	11/13/2017	\$ 2.59 / ft	0		\$51.89	Acier Ouellette Inc.	
		4				M1018B0.375x5.000	1010-1025 Steel Bar .375 X 5.000 : MATERIAL: AISI 1010- 1025 OR ASTM A36/A366/A569/A570 OR OR CSA G40-21 38W/44W/50W/60W/70W CSA G40-21 OR 38W/44W/50W/60W/70W receive ft				6		6		S009408	Stock	11/13/2017	\$ 11.35 / ft	0		\$68.12	Acier Ouellette Inc.
		5				M1018R0.625	M1018R0.625 : MATERIAL: AISI 1018- 1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108 receive ft				20	19.	20		S009409	Stock	11/13/2017	\$ 1.04 / ft	0		\$20.79	Acier Ouellette Inc.
		6				MT-4140QT-R0.750	AISI 4140 Quenched &Tempered Steel Round Bar 0.750" Dia. AISI 4140 QUENCHED & TEMPERED AS PER ASTM 4140 QT OR ASTM 4142 QT				10		10		S009410	Stock	11/13/2017	\$ 2.99 / ft	0		\$29.93	Acier Ouellette Inc.
		7				MT-4140QT-R1.500	AISI 4140 Quenched &Tempered Steel Round Bar 1.500" Dia. AISI 4140 QUENCHED & TEMPERED AS PER ASTM 4140 QT OR ASTM 4142 QT				9.5		10		S009411	Stock	11/13/2017	\$ 9.85 / ft	0		\$94.54	Acier Ouellette Inc.
		9				MT-4140QT-R1.750	AISI 4140 Quenched &Tempered Steel Round Bar 1.750" Dia. AISI 4140 QUENCHED & TEMPERED AS PER ASTM 4140 QT OR ASTM 4142 QT				5		5		S009412	Stock	11/13/2017	\$ 17.66 / ft	0		\$91.83	Acier Ouellette Inc.
Total:										71		71									\$281.21	



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038311

Supplier: ACI001-VC
Acier Ouellette Inc.
935 Boul. Du Havre
Valleyfield
QC
J6S 5L1 Canada
Phone: 800 667 4248
Fax: 450 377 5696

PO No: PO038311
PO Date: 11/9/17
Due Date: 11/14/17
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Lavoie, Chantal
Phone: clavoie@dartaero.com

NOV 09 2017

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments: QUOTATION # SOU0069540, SOU0069953,
SOU0069784, SOU0069784, SOU0068639

Items

Line Item	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	M5052H32S.063	-	5052-H32 .063 Sheet : MATERIAL: 5052-H32 ALUMINUM SHEET AS PER QQ-A-250/8 OR AMS-QQ-A-250/8 OR AMS 4016 OR ASTM B209 receive sf		Firmed	11/14/17	64 sf	0 sf	64 sf	\$3.7026562/sf	\$236.97
2	M4140HR0.375	-	4140 Round Bar .375 : AISI 4140H ROUND BAR PER AISI 4140 OR ASTM A304-02/-A-434- BC/-A193-03-GRADE B7/-A29-03/-A322-91 OR UNS# G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI receive ft		Firmed	11/14/17	12 ft	0 ft	12 ft	\$10.41666/ft	\$125.00
3	M1018A3.000W.250	-	1018 Angle 3.00" X0.250" Wall MATERIAL: ANGLE 44W ACCEPTABLE		Firmed	11/14/17	20 ft	0 ft	20 ft	\$2.5945/ft	\$51.89
4	M1018B0.375x5.000	-	1010-1025 Steel Bar .375 X 5.000 : MATERIAL: AISI 1010- 1025 OR ASTM A36/A366/A569/A570 OR OR CSA G40-21 38W/44W/50W/60W/70W CSA G40-21 OR 38W/44W/50W/60W/70W receive ft		Firmed	11/14/17	6 ft	0 ft	6 ft	\$11.3533/ft	\$68.12
5	M1018R0.625	-	M1018R0.625 : MATERIAL: AISI 1018- 1025 ROUND BAR		Firmed	11/14/17	20 ft	0 ft	20 ft	\$1.0395/ft	\$20.79



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038311

Items

Line Item	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
			M1010S20GA AS PER MIL-S-7097 OR ASTM A108 receive ft								
6	MT-4140QT-R0.750	✓	AISI 4140 Quenched & Tempered Steel Round Bar 0.750" Dia. AISI 4140 QUENCHED & TEMPERED AS PER ASTM 4140 QT OR ASTM 4142 QT		Firmed	11/14/17	✓ 10 ft	0 ft	10 ft	\$1.0395/ft	\$10.40
7	MT-4140QT-R1.500	✓	AISI 4140 Quenched & Tempered Steel Round Bar 1.500" Dia. AISI 4140 QUENCHED & TEMPERED AS PER ASTM 4140 QT OR ASTM 4142 QT		Firmed	11/14/17	✓ 9.7 ft	0 ft	10 ft	\$9.8474/ft	\$95.52
8	MT-4140QT-R0.875	-	AISI 4140 Quenched & Tempered Steel Round Bar 0.875" Dia. AISI 4140 QUENCHED & TEMPERED AS PER ASTM 4140 QT OR ASTM 4142 QT		Firmed	11/14/17	10 ft	0 ft	10 ft	\$3.894/ft	\$38.94
9	MT-4140QT-R1.750	✓	AISI 4140 Quenched & Tempered Steel Round Bar 1.750" Dia. AISI 4140 QUENCHED & TEMPERED AS PER ASTM 4140 QT OR ASTM 4142 QT		Firmed	11/14/17	✓ 5 ft	0 ft	5 ft	\$17.66/ft	\$88.30
10	MT-HRS-R-7.000	-	Hot Rolled Steel Round Bar 7.000" dia. (cut to 3.5" length) material: hot rolled steel bar as per ASTM A36 or ASTM A1011 / 44W / ASTM A1018		Firmed	11/14/17	1.167 ft	0 ft	1 ft	\$289.71594/ft	\$338.10

Line Item Note cut to size as per quote sou0069540
4 pcs cut at 3.500"

Grand Total: \$1,074.02

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

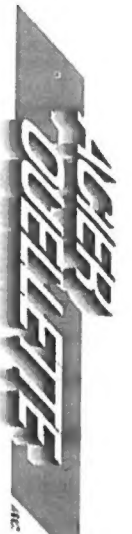
PURCHASE ORDER PO038311

Order Notes

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

A handwritten signature in black ink, appearing to be "C. Lavoie", is written over the bottom right corner of the Order Notes section.

Plex 11/9/17 1:49 PM dart.lavoie.chantal



ACIER OUELLETTE INC.

Order - Sales

Copy

CO00061364

935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N°

CL10001056

Date

2017/11/10

Delivery date

2017/11/13

Your order N°

38311

Processed by

Josianne Bourdon

Salesman

Carrier

OUELLETTE VALLEYFIELD

Credit Terme

Net 30 Days

Billed to

DART AEROSPACE LTD

1270, ABERDEEN ST.

HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att: CHANTAL LAVOIE Tél.: 613-632-5200

Delivery Route 5

Page

1

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only			
				CMD	EXP	B/O	IN	I	S	C
1 ANGLE 3 X 3 X 1/4 RANDOM A-3314-V 1131 <i>anf</i>	98.00	20.00	PL_\$CLB	1.00						
1 X 20' HEAT : 5207971402										
2 FLAT CR 3/8 X 5 1018 RANDOM FCR-385-V 2913 <i>anf</i>	38.25	6.00	PL_\$CLB	1.00						
1 X 6' HEAT : 161503										
COUPE A LA SCIE										
SCIE 1		1.00	UN							
3 ROUND CR 5/8 1018 RANDOM RCR-58-V 5351 <i>anf</i>	20.80	20.00	PL_\$CLB	1.00						
1 X 20' R/L HEAT : 139624										
SURCHARGE ENERGETIQUE			\$	0.00						
FRAIS_ENERGETIQUE										

NIR : R-109516-6

Next Page...



ACIER OUELLETTE INC.
935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Order - Sales

CO00061364

Billed to
DART AEROSPACE LTD
1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,
At: CHANTAL LAVOIE Tél.: 613-632-5200
Delivery Route 5

Customer N°	CL10001056
Date	2017/11/10
Delivery date	2017/11/13 00:00
Your order N°	38311
Processed by	Josiane Bourdon
Salesman	
Carrier	OUELLETTE VALLEYFIELD
Credit Terme	Net 30 Days
Page	2

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only			
				CMD	EXP	B/O	IN	I	S	C
Total Weight (LBS) : 157.05										

Conditions :
All sold and delivered materials remain the property of "Acier Ouellette Inc" until payment is made in full, complete and cashed. All lost materials are at the buyer's expense. The warranty offered by "Acier Ouellette Inc." is the same as offered and honored by the manufacturer and his warranty is transferred by "Acier Ouellette Inc." to the client. The buyer hereby accepts to respect the following conditions: Net 30 days from billing date and the buyer accepts to pay administration charges of 2% per month (24% per annum) on all past due amounts over 30 days. Any default in respect with this contract will lead to payment by acceleration and permits to the seller, at his choice to claim for the balance due or the repossession of the goods sold. All claims must be made within five (5) days with this document enclosed. Any merchandise that has been damaged, cut or modified cannot be returned. All goods returned must be with our authorization and are subject to a 25% restocking charge.

Prepared By :	Verified By :	Delivered By :	Time	Customer's Signature	Y	M	D

Total (\$CAD) 163.57
Deposit 0.00
Balance 163.57



ACIER OUELLETTE INC.
935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Order - Sales

Copy

CO00061371

Customer N°

CL10001056

Date

2017/11/10

Delivery date

2017/11/13

Your order N°

38311

Billed to

DART AEROSPACE LTD

1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Alt : CHANTAL LAVOIE Tél.: 613-632-5200

Delivery Route 5

Processed by

Josianne Bourdon

Salesman

Carrier

OUELLETTE VALLEYFIELD

Credit Terme

Net 30 Days

Page

1

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only			
				CMD	EXP	B/O	IN	I	S	C
1 ROUND 4140 HEAT TREAT 3/4 RANDOM R4140-34H-V 4949 <i>afk</i> <i>1 X 10' HEAT: M52573</i> COUPE A LA SCIE SCIE 1	15.02	10.00	PL_SCLB	1.00						
2 ROUND 4140 HEAT TREAT 1 1/2 RANDOM R4140-112H-V 4893 <i>1 X 97" DC HEAT: A162392</i> <i>afk</i>	57.56	9.58	PL_SCLB	1.00						
3 ROUND 4140 HEAT TREAT 1 3/4 RANDOM R4140-134H-V 4911 <i>1 X 5' DC HEAT: 166509</i> <i>afk</i>	40.89	5.00	PL_SCLB	1.00						

Conditions :

All sold and delivered materials remain the property of "Acier Ouellette Inc" until payment is made in full, complete and cashed. All tool materials are at the buyer's expense. The warranty offered by "Acier Ouellette Inc" is the same as offered and honored by the manufacturer and his warranty is transferred by "Acier Ouellette Inc" to the client. The buyer hereby accepts to respect the following conditions: Net 30 days from billing date and the buyer agrees to pay administration charges of 2% per month (24% per annum) on all past due amounts over 30 days. Any default in respect with this contract will lead to payment by acceleration and permits to the seller, at his choice to claim for the balance due or the repossession of the goods sold. All claims must be made within five (5) days with this document enclosed. Any merchandise that has been damaged, cut or modified cannot be returned. All goods returned must be with our authorization and are subject to a 25% restocking charge.

Prepared By :

Verified By :

Delivered By :

Time

Customer's Signature

Y M D

Total (\$CAD)

241.54

Deposit

0.00

Balance

241.54

Eaton Steel Bar Company Inspection Certificate 1626286

EN 10204:2004-3.1

BOI	Ship Date	Customer PO	Item	Customer Item	Item Description
207240	06-Mar-2017	846205	11444 INV 003	V016242	314 HR RD 410/42MM 2072IN S80 OTSF FG MST

All bundles listed below were produced using steel from Heat M5272 issued by CERDAU-MONROE and were completed from Eaton Steel Job 006032.

All solutions were used when producing these test results.				Value				Units			
Chemistry	Description	Value	Units	Heat Treating	Description	Value	Units				
C	Carbon	0.40000	PHOT	TEMPER T8P F	Temper Temp in Fahrenheit	500 - 2500	DECF				
Mn	Manganese	0.85000	PHOT	AUSTEN T8P F	Austenitizing Temp in Fahrenheit	1600 - 1700	DECF				
P	Phosphorus	0.01000	PHOT	SR TEMP F	Stress Relief Temp in Fahrenheit	500 - 2500	DECF				
S	Sulfur	0.02400	PHOT	ROCKWELL SH-HR	Magnetism in Gauss	0 - 20	GM				
Si	Silicon	0.25000	PHOT	TIME AT TEMP	Time at Temperature	Report					
Ni	Nickel	0.12000	PHOT	QUENCH MEDIA	Quench Media Requirement	PAY/O					
Cr	Chromium	0.96000	PHOT	STRESS FREE	Cert stress free	CERTIFIED					
Mo	Molybdenum	0.18000	PHOT	HT1410-420F	Quench & Temper	CONFORMS					
Al	Aluminum	0.03000	PHOT	HT1410-420F	Description	Value	Units				
Cu	Copper	0.17000	PHOT	MELT COUNTRY	Melted in Country	USA					
V	Vanadium	0.00200	PHOT	ROLLED COUNTRY	Rolled in Country	USA					
Co	Cobaltium	0.00200	PHOT	RSD RATIO	Reduction Ratio	0.1 - 50	RSD				
N	Nitrogen	0.00000	PHOT	ASTM Standard	Description	Value	Units				
P-S	Element Sum Limit	0.03400	PHOT	A193/J29M-01	Grade B7	CONFORMS					
D1	Equal Diameter	5.07000	IN	A434-90A-BC	ASTM BC Tensile and Yield Properties	CONFORMS					
Chemistry	Description	Value	Units	Structure	Description	Value	Units				
MACRO ETC	Report macro etch results		Units	PERCENT TM	Percent Tempered Martensite	80 - 100	PCT				
DIMASTER	Description	Value	Units	MICROSTRUCTURE	Reported Microstructure	20X	PCT				
Geometry	Description	Value	Units	Tag Number	Qty	Length					
	Diameter	0.7420 - 0.7580	IN	022-1921471	305 LBS	20FT					
J1	1/16 inch from Quenched End	56	HRC	ASTM A304 06-17/11/13							
J2	2/16 inch from Quenched End	56	HRC								
J3	3/16 inch from Quenched End	56	HRC								
J4	4/16 inch from Quenched End	56	HRC								
J5	5/16 inch from Quenched End	56	HRC								
J6	6/16 inch from Quenched End	56	HRC								
J7	7/16 inch from Quenched End	54	HRC								
J8	8/16 inch from Quenched End	52	HRC								
J9	9/16 inch from Quenched End	50	HRC								
J10	10/16 inch from Quenched End	48	HRC								
J11	11/16 inch from Quenched End	46	HRC								
J12	12/16 inch from Quenched End	44	HRC								
J13	13/16 inch from Quenched End	42	HRC								
J14	14/16 inch from Quenched End	40	HRC								
J15	15/16 inch from Quenched End	38	HRC								
J16	16/16 inch from Quenched End	36	HRC								
J17	17/16 inch from Quenched End	34	HRC								
J18	18/16 inch from Quenched End	32	HRC								
J19	19/16 inch from Quenched End	30	HRC								
J20	20/16 inch from Quenched End	28	HRC								
J21	21/16 inch from Quenched End	26	HRC								
J22	22/16 inch from Quenched End	24	HRC								
J23	23/16 inch from Quenched End	22	HRC								
J24	24/16 inch from Quenched End	20	HRC								
J25	25/16 inch from Quenched End	18	HRC								
J26	26/16 inch from Quenched End	16	HRC								
J27	27/16 inch from Quenched End	14	HRC								
J28	28/16 inch from Quenched End	12	HRC								
J29	29/16 inch from Quenched End	10	HRC								
J30	30/16 inch from Quenched End	8	HRC								
J31	31/16 inch from Quenched End	6	HRC								
J32	32/16 inch from Quenched End	4	HRC								
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J41	41/16 inch from Quenched End	0	HRC								
J42	42/16 inch from Quenched End	0	HRC								
J43	43/16 inch from Quenched End	0	HRC								
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J101	101/16 inch from Quenched End	0	HRC								
J102	102/16 inch from Quenched End	0	HRC								
J103	103/16 inch from Quenched End	0	HRC								
J104	104/16 inch from Quenched End	0	HRC								
J105	105/16 inch from Quenched End	0	HRC								
J106	106/16 inch from Quenched End	0	HRC								
J107	107/16 inch from Quenched End	0	HRC								
J108	108/16 inch from Quenched End	0	HRC								
J109	109/16 inch from Quenched End	0	HRC								
J110	110/16 inch from Quenched End	0	HRC								
J111	111/16 inch from Quenched End	0	HRC								
J112	112/16 inch from Quenched End	0	HRC								
J113	113/16 inch from Quenched End	0	HRC								
J114	114/16 inch from Quenched End	0	HRC								
J115	115/16 inch from Quenched End	0	HRC								
J116	116/16 inch from Quenched End	0	HRC								
J117	117/16 inch from Quenched End	0	HRC								
J118	118/16 inch from Quenched End	0	HRC								
J119	119/16 inch from Quenched End	0	HRC								
J120	120/16 inch from Quenched End	0	HRC								
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J136	136/16 inch from Quenched End	0	HRC								
J137	137/16 inch from Quenched End	0	HRC								
J138	138/16 inch from Quenched End	0	HRC								
J139	139/16 inch from Quenched End	0	HRC								
J140	140/16 inch from Quenched End	0	HRC								
J141	141/16 inch from Quenched End	0	HRC								
J142	142/16 inch from Quenched End	0	HRC								



GERDAU SPECIAL STEEL NORTH AMERICA
5591 MONTELL ROAD
JACKSON, MICHIGAN 49201

CERTIFIED MATERIAL TEST REPORT

CUSTOMER ORDER NUMBER	GERDAU ORDER NUMBER	SALE ORDER NUMBER	DATE
142324	1012462/4140EFVD	M52573 283416 101	11/05/13

DATE TO

DATE TO

SHEET 12
DAN MCNAUGHTON
EATON STEEL CORPORATION
10221 CAPITAL
OAK PARK, MI 48237

EATON STEEL CORPORATION
VULCAN HEAT TREATING
10 CROSSCREEK TRAIL
PELHAM, AL 35124

ORDERED

4140	0	3/4"	RND	20'	2"
4140	0	3/4"	RND	20'	2"

ITEM 1012462 REV 1 DTD 03/05/12; A29/A29M-12; A322-07

CHEMICAL ANALYSIS

C	Mn	P	S	SI	NI	Cr	Mo	Cu	Sn	Al
0.40	0.85	0.010	0.024	0.25	0.12	0.96	0.18	0.17	0.008	0.030
V	Nb									
0.002	0.002									

GRAIN SIZE SPECIFICATION ASTM E112 FINE GRAIN 5-8

HARDENABILITY SPECIFICATION ASTM A255/A304

THEORETICAL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24	26	28	30	32	34
56	56	56	56	56	56	56	54	53	52	50	48	46	44	43	42	40	38	36							

DI CALCULATION SPECIFICATION CAT 1E0024

5.07

REDUCTION RATIO SPECIFICATION ITEM 1012462

RATIO- 81.5 TO 1.0

PAGE 3
We certify that these data are correct and in compliance with specified requirements.

Gerdau Monroe
3000 East Front Street
Monroe, MI 48161
Wendy J. Craig
QUALITY ASSURANCE SUPERVISOR

CONTINUED ON PAGE 2



GERDAU SPECIAL STEEL NORTH AMERICA
5531 NORRILL ROAD
JACKSON, MICHIGAN 49201

CERTIFIED MATERIAL TEST REPORT

GERDAU ORDER NUMBER	GERDAU PART NUMBER	DATE ORDERED	DATE
1012462	1012462/4140EFVD	M52573	283416 101 11/05/13
DANIELI Cast		SHIP TO	

REPORT TO
DAN MCNAUGHTON
EATON STEEL CORPORATION
10221 CAPITAL
OAK PARK, MI 48237

EATON STEEL CORPORATION &
VULCAN HEAT TREATING
10 CROSSCREEK TRAIL
PELHAM, AL 35124

ORDERED

ORDER	SIZE	RND	LENGTH
4140	0 3/4"		20' 2"

ITEM 1012462 REV 1 DTD 03/05/12; A29/A29M-12; A322-07

RESIDUAL MAX SPECIFICATION ITEM 1012462

P-S = 0.0340

RESIDUAL MIN SPECIFICATION ITEM 1012462

P-S = 0.0340

ASTM E301 MACRO ETCH SATISFACTORY: S1/R1/C1; MEETS SAE J422

S5/05 RATING (WORST FIELD);
** MATERIAL 100% MELTED AND MANUFACTURED IN THE U.S.A. BY THE ELECTRIC
ARC FURNACE AND CONTINUOUS CASTING METHOD. THE PRODUCT HAS NOT
BEEN REPAIRED BY WELDING AND THIS MATERIAL HAS NOT BEEN EXPOSED
TO MERCURY OR TO ANY OTHER METAL ALLOY THAT IS LIQUID AT AMBIENT
TEMPERATURES DURING PROCESSING OR WHILE IN OUR POSSESSION.
GERDAU MONITORS ALL INCOMING SCRAP AND ALL HEATS OF STEEL TO ENSURE THAT
PRODUCTS SHIPPED ARE FREE OF RADIOACTIVE MATERIAL.

PAGE 2 OF 2

We certify that these data are correct and in compliance with specified requirements.

Gerdau Monroe
3000 East Front Street
Monroe, MI 48161

Wendy Craig
Wendy Craig
Quality Assurance Representative



Vulcan Threaded Products
10 Cross Creek Trail
Patterson, AL 35124
Tel (205) 620-5100
Fax (205) 620-6160

JOB MATERIAL CERTIFICATION

Job No: 344313

Combiners: 37521278 57525206

Customer: Eaton Steel Corporation

Customer Part No: 1012453-001

Customer PO No: 143438-753733

Order No: 201403

Notes: WD 753733 A

Part Information

Part No: HRB 4140.750240 Q&T ES

Part Group: MT TOLL

Place Weight: 30.05g

Applicable Specifications

Two

Spec
ASTM A193 B7/ASME SA193 B7

Customer Specification

Test Results

See following pages for tests

Certified Chemical Analysis

[illegible]

Minerals was manufactured, tested and inspected in accordance with Vulcan Threaded Products Inc. Quality Assurance Program and Material Rev. A, dated 4/23/71. Processed materials is Quarzified and Tempered. Stress /Tensile No weld repair performed on the material. No Mercury used in the production of this material. Mineralized and Manufactured in the USA.

Induction Heat Treated
Average Depth Reading <15
Induction heat treated steels are hardened from the surface to the center.

The new structure is made of 100% recycled polypropylene. Awaiting test: >1700 degrees F. Test specimens meet the ASTM A570-12a specifications.

Page Online 12/7/13 9:44 AM Web Form Page 1 of 2

QRT 377069

Uvilcan

Vulcan Threaded Products
 10 Crane Creek Trail
 Phenix, AL 35134
 Tel (205) 850-4100
 Fax (205) 850-5150

JOB MATERIAL CERTIFICATION

Job No: 344313

Containers: S7521276 S7525296

Job Information

Contract Date: 12/7/13

Test Results

Test No	Test Name	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results
Test No: 25176	Test: Quench & Temper Physical (Lab)	Yield Strength (ksi)	100	100	100	100	100	100	100
Test No: 25176	Test: Quench & Temper Physical (Lab)	Yield Strength (ksi)	100	100	100	100	100	100	100
Test No: 25176	Test: Quench & Temper Physical (Lab)	Yield Strength (ksi)	100	100	100	100	100	100	100

Customer: David - Superstar

Date: 12/7/13

Signature: _____



**NIAGARA
LASALLE
CORPORATION**

1412 150th Street
Hammond IN 46327-1799

CERTIFICATION

CERTIFICATE	Rev
H174279	3
DATE	10/14/16
PAGE	7

PURCHASE ORDER B96752	
ORDER 915827-1	
CUSTOMER ITEM V012142	ITEM 141500240Q04A
GRADE QT4140	SHAPE Round
SIZE 1.5000	SIZE MM 38.1000 MM
LENGTH 20' 0" / 24' 0"	LENGTH MM 6096 / 7315.2

4140/42 CA/AL-TRT QT-HR-STRESS FREE 130K TS-110K YS (.02% 100K) 16% EL 50% R/A SURFACE HBN 269/321 Spec/Rev. ASME SA193/SA193M GR-B7 Spec/Rev. ASTM A193/A193M-14 GR-B7 Spec/Rev. ASTM A29/A29M-15 Spec/Rev. ASTM A434-06(2012) CL-BC

HEAT		GRAIN PRACTICE		SOURCE / MELTED				CAST		REDUCTION RATIO		DI			
A162392		FINE(5-8)		STEEL DYNAMICS (USA)				BLOOM		79.2:1		5.86			
CHEMISTRY															
C	MN	P	S	SI	NI	CR	MO	CU	AL	V					
0.420	0.900	.013	.015	0.240	0.120	0.980	.200	.250	.030	.003					
N		TE		AS		PB		SE		BI		B		NB	
.008		N/A		N/A		N/A		N/A		N/A		.0005		N/A	
MECHANICAL															
JOB		TENSILE		.2% YIELD		ELONG		R OF A		HARDNESS		.02% YIELD		SR TEMP	
HS43559		149,434 PSI		133,398 PSI		17.40		53.10		HBN = 302		128,646			
QUENCH & TEMPER															
JOB		MACRO		SURFACE		AUSTENITIZED			TEMPERED			STRESS			
						TEMPERATURE	TIME	QUENCH	TEMPERATURE	TIME	TEMPERATURE	TIME			
HS43559		SATISFACTORY		HBN = 311		1650F	6.0 MIN	WATER	1100F	4.5 HRS	STRESS FREE				
HARDENABILITY															
01	02	03	04	05	06	08	10	12	14	16	20	24	28	32	
57	57	57	57	57	57	57	54	51	50	48	47	46	44	41	
LOT															
LOT		JOB		WEIGHT (LBS)		PIECES		LOT		JOB		WEIGHT (LBS)		PIECES	
6239867		HS43559		6,100		38		5240385		HS43559		4,700		35	
6240428		HS43559		3,772		28		5240480		HS43559		4,070		30	

17/4/13

WE, hereby certify that these goods were produced in compliance with all applicable requirements of sections 6, 7, and 12 of the Fair Labor Standards Act, as amended, and all regulations and orders of the United States Department of Labor issued under section 14 thereof. Material was not exposed to mercury or any metal alloy that is liquid at ambient temperature during processing or while in our possession. No weld repairs performed on the above material.

CERTIFICATE OF TEST

By:

Walter P. Kretzler - Director of Q.A./Chief Metallurgist

Eaton Steel Bar Company Inspection Certificate 1601418

EN 10204:2004-3.1

Customer	BOL	Ship Date	Customer PO	Item	Customer Item	Item Description
	201063	22-04-2016	896887	11132 rev 004	V016262	1-3/4 HR RD 4140/42HM 24H SBO QTSF FG MST
All bundles listed below were produced using steel from Heat 165509 issued by ALTON STEEL and were completed from Eaton Steel Job 798489.						
Chemistry	Test Method	Value	Units	Test Method	Description	Value
C	Carbon	0.4100	P/100	TEMPER TREAT P	Temper Temp in Fahrenheit	500 - 2500
Mn	Manganese	0.8900	P/100	Austenitizing Temp F	Austenitizing Temp in Fahrenheit	1600 - 1700
P	Phosphorus	0.0140	P/100	SR TEMP F	Stress Relief Temp in Fahrenheit	500 - 2500
S	Sulfur	0.0220	P/100	WATER-TEMP	Magnesium in Gases	0 - 20
Si	Silicon	0.2300	P/100	TEMP AT TEMP	Flow at Temperature	Report
Al	Aluminum	0.1090	P/100	STRESS FREE	Quench Media Requirements	P/W/O
Cr	Chromium	0.8460	P/100	HT140-4207	Quench & Temper	CERTIFIED
Mo	Molybdenum	0.0220	P/100	Roll Processing	Rolling in Country	USA
Al	Aluminum	0.0010	P/100	RED RATIO	Reduction Ratio	20.37
Cu	Copper	0.2300	P/100	ACTIVATION	ASTM B7	CONFORMS
V	Vanadium	0.0280	P/100	PERCENT TM	Percent Tempered Martensite	80 - 100
N	Nitrogen	0.0100	P/100	Microstructure	Reported Microstructure	33F36in/24F33in
P.S	Element Sum Limit	0.0350	P/100	Tag Number	022-1875938	4155 LBS
DT	Ideal Blaster	4.9700	IN			
Cleaning:						
Macro Etch	Description	Value	Units			
Chemistry	Description	Value	Units			
DIAMETER	Diameter	1.734 - 1.756	IN			
1/16	1/16 inch from Quenched End	56	HRC			
3/16	3/16 inch from Quenched End	56	HRC			
1/2	1/2 inch from Quenched End	56	HRC			
3/4	3/4 inch from Quenched End	56	HRC			
1	1 inch from Quenched End	56	HRC			
1 1/4	1 1/4 inch from Quenched End	56	HRC			
1 1/2	1 1/2 inch from Quenched End	56	HRC			
1 3/4	1 3/4 inch from Quenched End	56	HRC			
2	2 inch from Quenched End	56	HRC			
2 1/4	2 1/4 inch from Quenched End	56	HRC			
2 1/2	2 1/2 inch from Quenched End	56	HRC			
2 3/4	2 3/4 inch from Quenched End	56	HRC			
3	3 inch from Quenched End	56	HRC			
3 1/4	3 1/4 inch from Quenched End	56	HRC			
3 1/2	3 1/2 inch from Quenched End	56	HRC			
3 3/4	3 3/4 inch from Quenched End	56	HRC			
4	4 inch from Quenched End	56	HRC			
4 1/4	4 1/4 inch from Quenched End	56	HRC			
4 1/2	4 1/2 inch from Quenched End	56	HRC			
4 3/4	4 3/4 inch from Quenched End	56	HRC			
5	5 inch from Quenched End	56	HRC			
5 1/4	5 1/4 inch from Quenched End	56	HRC			
5 1/2	5 1/2 inch from Quenched End	56	HRC			
5 3/4	5 3/4 inch from Quenched End	56	HRC			
6	6 inch from Quenched End	56	HRC			
6 1/4	6 1/4 inch from Quenched End	56	HRC			
6 1/2	6 1/2 inch from Quenched End	56	HRC			
6 3/4	6 3/4 inch from Quenched End	56	HRC			
7	7 inch from Quenched End	56	HRC			
7 1/4	7 1/4 inch from Quenched End	56	HRC			
7 1/2	7 1/2 inch from Quenched End	56	HRC			
7 3/4	7 3/4 inch from Quenched End	56	HRC			
8	8 inch from Quenched End	56	HRC			
8 1/4	8 1/4 inch from Quenched End	56	HRC			
8 1/2	8 1/2 inch from Quenched End	56	HRC			
8 3/4	8 3/4 inch from Quenched End	56	HRC			
9	9 inch from Quenched End	56	HRC			
9 1/4	9 1/4 inch from Quenched End	56	HRC			
9 1/2	9 1/2 inch from Quenched End	56	HRC			
9 3/4	9 3/4 inch from Quenched End	56	HRC			
10	10 inch from Quenched End	56	HRC			
10 1/4	10 1/4 inch from Quenched End	56	HRC			
10 1/2	10 1/2 inch from Quenched End	56	HRC			
10 3/4	10 3/4 inch from Quenched End	56	HRC			
11	11 inch from Quenched End	56	HRC			
11 1/4	11 1/4 inch from Quenched End	56	HRC			
11 1/2	11 1/2 inch from Quenched End	56	HRC			
11 3/4	11 3/4 inch from Quenched End	56	HRC			
12	12 inch from Quenched End	56	HRC			
12 1/4	12 1/4 inch from Quenched End	56	HRC			
12 1/2	12 1/2 inch from Quenched End	56	HRC			
12 3/4	12 3/4 inch from Quenched End	56	HRC			
13	13 inch from Quenched End	56	HRC			
13 1/4	13 1/4 inch from Quenched End	56	HRC			
13 1/2	13 1/2 inch from Quenched End	56	HRC			
13 3/4	13 3/4 inch from Quenched End	56	HRC			
14	14 inch from Quenched End	56	HRC			
14 1/4	14 1/4 inch from Quenched End	56	HRC			
14 1/2	14 1/2 inch from Quenched End	56	HRC			
14 3/4	14 3/4 inch from Quenched End	56	HRC			
15	15 inch from Quenched End	56	HRC			
15 1/4	15 1/4 inch from Quenched End	56	HRC			
15 1/2	15 1/2 inch from Quenched End	56	HRC			
15 3/4	15 3/4 inch from Quenched End	56	HRC			
16	16 inch from Quenched End	56	HRC			
16 1/4	16 1/4 inch from Quenched End	56	HRC			
16 1/2	16 1/2 inch from Quenched End	56	HRC			
16 3/4	16 3/4 inch from Quenched End	56	HRC			
17	17 inch from Quenched End	56	HRC			
17 1/4	17 1/4 inch from Quenched End	56	HRC			
17 1/2	17 1/2 inch from Quenched End	56	HRC			
17 3/4	17 3/4 inch from Quenched End	56	HRC			
18	18 inch from Quenched End	56	HRC			
18 1/4	18 1/4 inch from Quenched End	56	HRC			
18 1/2	18 1/2 inch from Quenched End	56	HRC			
18 3/4	18 3/4 inch from Quenched End	56	HRC			
19	19 inch from Quenched End	56	HRC			
19 1/4	19 1/4 inch from Quenched End	56	HRC			
19 1/2	19 1/2 inch from Quenched End	56	HRC			
19 3/4	19 3/4 inch from Quenched End	56	HRC			
20	20 inch from Quenched End	56	HRC			
20 1/4	20 1/4 inch from Quenched End	56	HRC			
20 1/2	20 1/2 inch from Quenched End	56	HRC			
20 3/4	20 3/4 inch from Quenched End	56	HRC			
21	21 inch from Quenched End	56	HRC			
21 1/4	21 1/4 inch from Quenched End	56	HRC			
21 1/2	21 1/2 inch from Quenched End	56	HRC			
21 3/4	21 3/4 inch from Quenched End	56	HRC			
22	22 inch from Quenched End	56	HRC			
22 1/4	22 1/4 inch from Quenched End	56	HRC			
22 1/2	22 1/2 inch from Quenched End	56	HRC			
22 3/4	22 3/4 inch from Quenched End	56	HRC			
23	23 inch from Quenched End	56	HRC			
23 1/4	23 1/4 inch from Quenched End	56	HRC			
23 1/2	23 1/2 inch from Quenched End	56	HRC			
23 3/4	23 3/4 inch from Quenched End	56	HRC			
24	24 inch from Quenched End	56	HRC			
24 1/4	24 1/4 inch from Quenched End	56	HRC			
24 1/2	24 1/2 inch from Quenched End	56	HRC			
24 3/4	24 3/4 inch from Quenched End	56	HRC			
25	25 inch from Quenched End	56	HRC			
25 1/4	25 1/4 inch from Quenched End	56	HRC			
25 1/2	25 1/2 inch from Quenched End	56	HRC			
25 3/4	25 3/4 inch from Quenched End	56	HRC			
26	26 inch from Quenched End	56	HRC			
26 1/4	26 1/4 inch from Quenched End	56	HRC			
26 1/2	26 1/2 inch from Quenched End	56	HRC			
26 3/4	26 3/4 inch from Quenched End	56	HRC			
27	27 inch from Quenched End	56	HRC			
27 1/4	27 1/4 inch from Quenched End	56	HRC			
27 1/2	27 1/2 inch from Quenched End	56	HRC			
27 3/4	27 3/4 inch from Quenched End	56	HRC			
28	28 inch from Quenched End	56	HRC			
28 1/4	28 1/4 inch from Quenched End	56	HRC			
28 1/2	28 1/2 inch from Quenched End	56	HRC			
28 3/4	28 3/4 inch from Quenched End	56	HRC			
29	29 inch from Quenched End	56	HRC			
29 1/4	29 1/4 inch from Quenched End	56	HRC			
29 1/2	29 1/2 inch from Quenched End	56	HRC			
29 3/4	29 3/4 inch from Quenched End	56	HRC			
30	30 inch from Quenched End	56	HRC			
30 1/4	30 1/4 inch from Quenched End	56	HRC			
30 1/2	30 1/2 inch from Quenched End	56	HRC			
30 3/4	30 3/4 inch from Quenched End	56	HRC			
31	31 inch from Quenched End	56	HRC			
31 1/4	31 1/4 inch from Quenched End	56	HRC			
31 1/2	31 1/2 inch from Quenched End	56	HRC			
31 3/4	31 3/4 inch from Quenched End	56	HRC			
32	32 inch from Quenched End	56	HRC			
32 1/4	32 1/4 inch from Quenched End	56	HRC			
32 1/2	32 1/2 inch from Quenched End	56	HRC			
32 3/4	32 3/4 inch from Quenched End	56	HRC			
33	33 inch from Quenched End	56	HRC			
33 1/4	33 1/4 inch from Quenched End	56	HRC			
33 1/2	33 1/2 inch from Quenched End	56	HRC			
33 3/4	33 3/4 inch from Quenched End	56	HRC			
34	34 inch from Quenched End	56	HRC			
34 1/4	34 1/4 inch from Quenched End	56	HRC			
34 1/2	34 1/2 inch from Quenched End	56	HRC			
34 3/4	34 3/4 inch from Quenched End	56	HRC			
35	35 inch from Quenched End	56	HRC			
35 1/4	35 1/4 inch from Quenched End	56	HRC			
35 1/2	35 1/2 inch from Quenched End	56	HRC			
35 3/4	35 3/4 inch from Quenched End	56	HRC			
36	36 inch from Quenched End	56	HRC			
36 1/4	36 1/4 inch from Quenched End	56	HRC			
36 1/2	36 1/2 inch from Quenched End	56	HRC			
36 3/4	36 3/4 inch from Quenched End	56	HRC			
37	37 inch from Quenched End	56	HRC			
37 1/4	37 1/4 inch from Quenched End	56	HRC			
37 1/2	37 1/2 inch from Quenched End	56	HRC			
37 3/4	37 3/4 inch from Quenched End	56	HRC			
38	38 inch from Quenched End	56	HRC			
38 1/4	38 1/4 inch from Quenched End	56	HRC			
38 1/2	38 1/2 inch from Quenched End	56	HRC			
38 3/4	38 3/4 inch from Quenched End	56	HRC			
39	39 inch from Quenched End	56	HRC			
39 1/4	39 1/4 inch from Quenched End	56	HRC			
39 1/2	39 1/2 inch from Quenched End	56	HRC			
39 3/4	39 3/4 inch from Quenched End	56	HRC			
40	40 inch from Quenched End	56	HRC			
40 1/4	40 1/4 inch from Quenched End	56	HRC			
40 1/2	40 1/2 inch from Quenched End	56	HRC			
40 3/4	40 3/4 inch from Quenched End	56	HRC			
41	41 inch from Quenched End	56	HRC			
41 1/4	41 1/4 inch from Quenched End	56	HRC			
41 1/2	41 1/2 inch from Quenched End	56	HRC			
41 3/4	41 3/4 inch from Quenched End	56	HRC			
42	42 inch from Quenched End	56	HRC			
42 1/4	42 1/4 inch from Quenched End	56	HRC			
42 1/2	42 1/2 inch from Quenched End	56	HRC			
42 3/4	42 3/4 inch from Quenched End	56	HRC			
43	43 inch from Quenched End	56	HRC			
43 1/4	43 1/4 inch from Quenched End	56	HRC			
43 1/2	43 1/2 inch from Quenched End	56	HRC			
43 3/4	43 3/4 inch from Quenched End	56	HRC			
44	44 inch from Quenched End	56	HRC			
44 1/4	44 1/4 inch from Quenched End	56	HRC			
44 1/2	44 1/2 inch from Quenched End	56	HRC			
44 3/4	44 3/4 inch from Quenched End	56	HRC			
45	45 inch from Quenched End	56	HRC			
45 1/4	45 1/4 inch from Quenched End	56	HRC			
45 1/2	45 1/2 inch from Quenched End	56	HRC			
45 3/4	45 3/4 inch from Quenched End	56	HRC			
46	46 inch from Quenched End	56	HRC			
46 1/4	46 1/4 inch from Quenched End	56	HRC			
46 1/2	46 1/2 inch from Quenched End	56	HRC			
46 3/4	46 3/4 inch from Quenched End	56	HRC			
47	47 inch from Quenched End	56	HRC			
47 1/4	47 1/4 inch from Quenched End	56	HRC			
47 1/2	47 1/2 inch from Quenched End	56	HRC			

Lab Services Report



BILL TO: Apollo Heat Treating
10400 Capital Avenue
Oak Park, MI

ATTN: Randy Call
rcall@apolohp.com

10221 Capital Avenue
Oak Park, MI 48237
(248)543-3578 telephone
(248)398-1434 facsimile

SND TO: Apollo Heat Treating
10400 Capital Avenue
Oak Park, MI

Report Date: 10/14/2018

Report ID: 16-3002

Request ID:

This report contains results for the indicated services performed on the following sample(s)

Part No	11132 QTSF	Finish	HR	Shape	Round	Work Order	799489
Size	1-3/4	Grade	4140				
Titan Sample ID	Heat	Customer Sample ID					
16-3002-1	160509	W/O 799489 Job 2167					

Steve Avery

Report Approved By: Steve Avery

Mechanical Testing

ASTM E8M-15a

ASTM E10-18



Mechanical Testing

ASTM E8M-15a

ASTM E10-18

Sample ID	Ultimate Tensile, psi	0.2% Offset Yield, psi	Elongation, %	Reduction of Area, %	Hardness
16-3002-1	151,300	138,300	18	55	321

Test Comments

Mechanically tested at 1144 Pascals

Any services with a section marked with * are not part of Titan Metallurgy's current AZLA agreed tacit.
All testing performed by Titan Metallurgy was done at airtight (room) temperatures.

Report ID: 16-3002
Page 1 of 2

Any services within a section trained with * are not part of Titan Veterinary's current A2LA accreditation.
All testing performed by Titan Veterinary was done in strict (room) temperature



Heat Treating & Processing Company, LLC.
10400 Capital Avenue • Oak Park, Michigan 48237 • (248) 398-3434

CERTIFICATION OF HEAT TREATMENT

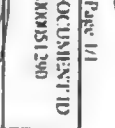
Date: 10 / 17 / 2016
Certification Number: 16 - 0467
Customers Order Number: 759489
Part Number: 10902 - 11132
Heat Number: 165509
Heat Treat Job Number: 2167

Material: 4140
Quantity: 206 Pcs.
Weight: 41,080 Lbs.
Description: 1.7500" Diameter x 24" 2" Length
Per Specification: ESH HT4140 - 42QT

	Temperature	Time at Heat	Coolant
Normalized	N/A		
Preheat	N/A		
Austenitized/Hardened	1600 °F	45 Minutes	
Spray Quenched	102.8 °F - 104.8 °F	N/A	Water
Temper	1220 °F	1 Hour 15 Minutes	Air Cooled to Ambient
Temper	N/A		

Method of heat treat monitor, set point thermocouple (Type K). Equipment calibrated per AMS2750E.
We hereby certify the above material has been treated in the manner described are correct as
contained in the records of Apollo Heat Treating and Processing, LLC.


Randy L. Call
Plant Manager
Apollo Heat Treating & Processing, LLC



IX-7-10-12

1991年10月10日 星期日 晴

40910

FLK-582-FL

PO. 8319

Customer Name

Customer PO#

Invoice No

Shipper No

Heat Number

ACIER OUELLETTE INC. DIV SALABE

AC8919

90593

84846

161503

48657



NUEVA INCAL, S. A.
aceros calibrados

Gaioibarra, 24 - Apartado 13
48300 GERNIKA - BIZKAIA Spain
Teléfono: (34) 94 625 17 12 16
Fax: (34) 94 625 46 27
nuevaincal@nuevaincal.com
www.nuevaincal.com



CERTIFICADO DE CALIDAD

Destinatario :

Material :

1018 COLD ROLLED

CERTIFICAMOS :

Que el material suministrado con cargo a los pedidos de referencia y amparado por nuestro albarán N° EX/4.511 y Fra. N° A/21.801 corresponden a los análisis y fusiones siguientes de acuerdo con la norma EN 10204 / 2.2:

S/Pedidos N°	Composición Química de la colada									Caract. mecánicas laminado		
	MATERIAL	CALIDAD	COLADA	C. %	Mn. %	Si. %	S. %	P. %		Re N/mm2	Rm N/mm2	A %
MON-54349	1 X 1		583061	0,17	0,72	0,16	0,018	0,019		321,00	496,00	29,00
MON-54349	1-1/4 X 1-1/4		7855	0,17	0,75	0,19	0,009	0,016		448,00	293,00	37,20
MON-54349	1-1/2 X 1/4		47395	0,15	0,76	0,16	0,032	0,014		349,00	499,00	37,00
MON-54349	2 X 1/4		580842	0,16	0,72	0,17	0,023	0,014		330,00	500,00	30,00
MON-54349	4 X 2		162442	0,20	0,70	0,17	0,004	0,017		545,00	573,00	15,00
MON-54349	3-1/2 X 1/2		161629	0,16	0,79	0,18	0,002	0,021		329,21	454,32	24,66
MON-54349	5 X 3/8		161503	0,17	0,80	0,16	0,004	0,023		548,00	576,00	13,00
MON-54349	5 X 1		161962	0,16	0,84	0,18	0,006	0,018		548,00	575,00	15,00
MON-54349	5 X 1-1/2		161915	0,17	0,78	0,19	0,004	0,021		544,00	572,00	14,00
MON-54349	4 X 1		580133	0,16	0,73	0,18	0,022	0,015		320,00	490,00	32,00
MON-54349	6 X 3/8		160518	0,16	0,68	0,16	0,007	0,016		552,00	579,00	8,00
MON-54349	6 X 1/2		161361	0,18	0,73	0,23	0,006	0,017		558,00	586,00	13,00
MON-54349	6 X 5/8		152780	0,16	0,85	0,19	0,004	0,011		544,00	570,00	9,00
MON-54349	6 X 1		161367	0,16	0,82	0,17	0,004	0,017		551,00	578,00	14,00
MON-54349	8 X 1/2		162494	0,16	0,79	0,17	0,009	0,012		567,00	595,00	14,00
MON-54349	8 X 1		161036	0,20	0,74	0,19	0,006	0,016		565,00	593,00	14,00

Gernika, 30 de Noviembre de 2.016

Responsable de Calidad

17/11/13





**CALIBRADOS
PRADERA, S.A.**

ARANA Y LUPARDO, 2
48490 UGAO-MIRAVALLS/VIZCAYA (SPAIN)
Tfno.: 946480211
Fax: 946480128
Email: calpradera@calibradospradera.es
www.calibradospradera.es

TRA 1469 53°
48493
3P

CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a /Made according to:

EN 10204/DIN 50049

3.1

Nº CERTIFICADO / CERTIFICATE NR.: 47704

ALBARAN 47704
Delivery Note Nr.

CLIENTE LES ACIERS TRANSBEC (1997) L.TÉE
CUSTOMER

Norma : EN 10277

Productos Calibrados de acero. Condiciones técnicas de suministro.

Norm :

Bright steel products. Technical delivery conditions.

PRODUCTO SOLICITADO / PRODUCT ACCORDING ASTM A108

Nº PEDIDO Purchase Order	DESCRIPCIÓN Description	KGS.	TOLERANCIA TOLERANCE	OF	MEIDA Measurement
PAR-47152	12L14 HEX. ESTIRADO 31,75 (1 1/4")	996	-0,076	915907	31,75
PAR-47472	12L14 RED. ESTIRADO 50,80 (2")	1.034	-0,076	916489	50,80
PAR-47851	12L14 RED. ESTIRADO 50,80 (2")	1.090	-0,076	916489	50,80
PAR-47851	1018 RED. ESTIRADO 31,75 (1 1/4")	994	-0,051	139211	31,75
MJP-47856	12L14 RED. ESTIRADO 25,40 (1")	3.000	-0,051	139256	25,40
PAR-47786	1018 RED. ESTIRADO 30,16 (1 3/16")	1.090	0,051	139297	30,16
PAR-47786	12L14 RED. ESTIRADO 19,05 (3/4")	2.002	-0,051	202433	19,05
MJP-47861	12L14 HEX. ESTIRADO 31,75 (1 1/4")	994	-0,076	915907	31,75
OU-47812	1018 RED. ESTIRADO 9,53 (3/8")	1.040	0,051	139333	9,53
SM-47572	1018 RED. ESTIRADO 9,53 (3/8")	1.040	-0,051	139477	9,53
SM-47572	1018 RED. ESTIRADO 31,75 (1 1/4")	1.988	-0,051	139481	31,75
AQM-47672	1018 RED. ESTIRADO 31,75 (1 1/4")	1.990	-0,051	139547	31,75
OU-47832	12L14 RED. ESTIRADO 19,05 (3/4")	1.998	-0,051	202313	19,05
OU-47832	1018 RED. ESTIRADO 15,88 (5/8")	2.004	-0,051	139624	15,88
OU-47822	1018 RED. ESTIRADO 31,75 (1 1/4")	996	-0,051	139627	31,75
MJP-47896	1018 RED. ESTIRADO 15,88 (5/8")	1.010	-0,051	139776	15,88

Composición química de la colada / Chemical Analysis of Heat

MEDIDA Measurement	OF	COLADA Cast Nr.	% C	% Cr	% Cu	% Mn	% Mo	% Ni	% P	% Pb	% S	% Si
31,75 0,00	915907	39680 W	0,070	0,090	0,230	1,110	0,030	0,110	0,051	0,210	0,329	0,020
50,80 0,00	916489	41232 IS	0,060	0,000	0,000	1,120	0,000	0,000	0,043	0,220	0,318	0,010
50,80 0,00	916489	41232 IS	0,060	0,000	0,000	1,120	0,000	0,000	0,043	0,220	0,318	0,010
31,75 0,00	139211	41410 AG	0,165	0,000	0,000	0,758	0,000	0,000	0,016	0,000	0,021	0,220
25,40 0,00	139256	41300 AG	0,060	0,086	0,014	1,130	0,006	0,023	0,063	0,300	0,310	0,003
30,16 0,00	139297	41411 AG	0,165	0,000	0,000	0,758	0,000	0,000	0,016	0,000	0,021	0,220
19,05 0,00	202433	41406 AA	0,071	0,046	0,019	1,085	0,004	0,029	0,060	0,295	0,292	0,008
31,75 0,00	915907	39680 W	0,070	0,090	0,230	1,110	0,030	0,110	0,051	0,210	0,329	0,020
9,53 0,00	139333	41460 GM	0,160	0,000	0,000	0,750	0,000	0,000	0,021	0,000	0,032	0,160
9,53 0,00	139477	41460 GM	0,160	0,000	0,000	0,750	0,000	0,000	0,021	0,000	0,032	0,160
31,75 0,00	139481	41410 AG	0,165	0,000	0,000	0,758	0,000	0,000	0,016	0,000	0,021	0,220
31,75 0,00	139547	41410 AG	0,165	0,000	0,000	0,758	0,000	0,000	0,016	0,000	0,021	0,220
19,05 0,00	202313	41406 AA	0,071	0,046	0,019	1,085	0,004	0,029	0,060	0,295	0,292	0,008
15,88 0,00	139624	41508 G	0,160	0,000	0,000	0,650	0,000	0,000	0,021	0,000	0,023	0,142
31,75 0,00	139627	41410 AG	0,165	0,000	0,000	0,758	0,000	0,000	0,016	0,000	0,021	0,220
15,88 0,00	139776	41508 G	0,160	0,000	0,000	0,650	0,000	0,000	0,021	0,000	0,023	0,142

Características mecánicas / Mechanical properties

24/12/13



ARANA Y LUPARDO, 2
48490 UGAO-MIRAVALLS/VIZCAYA (SPAIN)
Tfno.: 946480211
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Email: calpradera@calibradospradera.es
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CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a /Made according to:

EN 10204/DIN 50049

3.1

Nº CERTIFICADO / CERTIFICATE Nº.: 47704

ALBARAN 47704
Delivery Note Nr.

CLIENTE IJS ACIERS TRANSBEC (1997) L'ÉH
CUSTOMER

Norma : EN 10277

Productos Calibrados de acero. Condiciones técnicas de suministro.

Norm :

Bright steel products. Technical delivery conditions.

MEDIDA		OF	COLADA	Resistencia	Lím.elástico	Alargamiento	Dureza HB	Estricción %
Measurement			Cast Nr.	Tens. strength	Yield point	Elongation	Hardness	
				N/mm2	0,2% N/mm2	Lo=50 mm.	HB	
31,75		915907	39680 W	533,38	523,05	12,04	169,00	45,79
50,80		916489	41232 IS	515,66	509,28	16,20	178,00	53,91
50,80		916489	41232 IS	515,66	509,28	16,20	178,00	53,91
31,75		139211	41410 AG	558,02	536,07	36,40	159,00	57,29
25,40		139256	41300 AG	556,11	543,10	19,46	159,00	46,32
30,16		139297	41411 AG	551,06	525,36	37,06	165,00	59,43
19,05		202433	41406 AA	584,38	568,82	16,86	172,00	47,83
31,75		915907	39680 W	533,38	523,05	12,04	169,00	45,79
9,53		139333	41460 GM	735,60	691,90	12,70	216,00	59,96
9,53		139477	41460 GM	735,60	691,90	12,70	216,00	59,96
31,75		139481	41410 AG	558,02	536,07	36,40	159,00	57,29
31,75		139547	41410 AG	558,02	536,07	36,40	159,00	57,29
19,05		202313	41406 AA	584,38	568,82	16,86	172,00	47,83
15,88		139624	41508 G	602,29	574,24	20,18	176,00	60,19
31,75		139627	41410 AG	558,02	536,07	36,40	159,00	57,29
15,88		139776	41508 G	602,29	574,24	20,18	176,00	60,19

Calidad Superficial

DESCRIPCIÓN Description	OF	Clase EN 10277-1
12L14 HEX. ESTIRADO 31,75 (1 1/4")	915907	1
12L14 RED. ESTIRADO 50,80 (2")	916489	2
12L14 RED. ESTIRADO 50,80 (2")	916489	2
1018 RED. ESTIRADO 31,75 (1 1/4")	139211	3
12L14 RED. ESTIRADO 25,40 (1")	139256	3
1018 RED. ESTIRADO 30,16 (1 3/16")	139297	2
12L14 RED. ESTIRADO 19,05 (3/4")	202433	3
12L14 HEX. ESTIRADO 31,75 (1 1/4")	915907	1
1018 RED. ESTIRADO 9,53 (3/8")	139333	2
1018 RED. ESTIRADO 9,53 (3/8")	139477	2
1018 RED. ESTIRADO 31,75 (1 1/4")	139481	3
1018 RED. ESTIRADO 31,75 (1 1/4")	139547	3
12L14 RED. ESTIRADO 19,05 (3/4")	202313	3
1018 RED. ESTIRADO 15,88 (5/8")	139624	2
1018 RED. ESTIRADO 31,75 (1 1/4")	139627	3
1018 RED. ESTIRADO 15,88 (5/8")	139776	2



ARANA Y LUPARDO, 2
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CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a /Made according to:

EN 10204/DIN 50049

3.1

N° CERTIFICADO / CERTIFICATE NR.: 47704

ALBARAN 47704 Delivery Note Nr.	CLIENTE LES ACIERS TRANSPEC (1997) LTÉE CUSTOMER
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Norma : EN 10277

Productos Calibrados de acero. Condiciones técnicas de suministro.

Norm :

Bright steel products. Technical delivery conditions.

Observaciones: BARRAS DE ACERO ESTRIADAS EN FRIO SIN ALEAR

DEPARTAMENTO DE CALIDAD: Certifica que el mencionado producto cumple con las especificaciones del pedido.

QUALITY DEPARTMENT: Certify that the product fulfils the order specifications.

Fecha/Date: 08/06/2017

Firmado: Susana Fernández
Directora de Calidad



Sistema de
Gestión
SO 0001:2008
www.tuv.com
ID: 1101130024

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140QT R1.750
 DATE: 17/11/13

PO / BATCH NO.: 38311 / SDD9412

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 5
 QUANTITY INSPECTED: 5
 QUANTITY REJECTED:

THICKNESS ORDERED: 1.750
 THICKNESS RECEIVED: 1.750
 SHEET SIZE ORDERED:
 SHEET SIZE RECEIVED:

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	N	
CORRECT FINISH	Y	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL PER M-DRAWING	Y	N	ASTM A193
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	Y	N	
CORRECT REF # TO LINK CERT	Y	N	HEATH 166505
CORRECT MATERIAL IDENTIFICATION	Y	N	MT 4140QT R1.750
CORRECT M# ON THE MATERIAL	Y	N	SDD9412
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u> </u>		SIGNED OFF BY: <u> </u>	
DATE: <u>17/11/13</u>		DATE: <u> </u>	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140QT R1.500
 DATE: 17/11/13

PO / BATCH NO.: 38311/5009411

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 9.5'
 QUANTITY INSPECTED: 9.5'
 QUANTITY REJECTED: _____

THICKNESS ORDERED: 1.500
 THICKNESS RECEIVED: 1.500
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	ASTM A193
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	HEATH A162392
CORRECT MATERIAL IDENTIFICATION	(Y)	N	MT-4140QT R1.500
CORRECT M# ON THE MATERIAL	(Y)	N	8009411
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>gml</u> DATE: <u>17/11/13</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140QT-RD.750

PO / BATCH NO.: 38311/SL09407

DATE: 17/11/13

MATERIAL CERT REC'D: yes

THICKNESS ORDERED: .750

QUANTITY RECEIVED: 10'

THICKNESS RECEIVED: 1.00

QUANTITY INSPECTED: 10'

SHEET SIZE ORDERED: _____

QUANTITY REJECTED: _____

SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/>	
CORRECT FINISH	Y	N	
CORROSION	Y	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL PER M-DRAWING	Y	N	ASTM A193
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	Y	N	HEAT# M52573
CORRECT MATERIAL IDENTIFICATION	Y	N	MT-4140QT R.750
CORRECT M# ON THE MATERIAL	Y	N	5009407
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>[Signature]</u> DATE: <u>17/11/13</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MID18.43.DDDW.250

PO / BATCH NO.: 38311 / S009407

DATE: 17/11/13

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 20'
 QUANTITY INSPECTED: 20'
 QUANTITY REJECTED: _____

THICKNESS ORDERED: .250
 THICKNESS RECEIVED: .250
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	HEAT# 5207971402
CORRECT MATERIAL IDENTIFICATION	(Y)	N	MID18.43.DDDW.250
CORRECT M# ON THE MATERIAL	(Y)	N	S009407
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>amf</u> DATE: <u>17/11/13</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M1018 R. 1.625
 DATE: 17/11/13

PO / BATCH NO.: 38311/8009409

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 19'
 QUANTITY INSPECTED: 19'
 QUANTITY REJECTED: _____

THICKNESS ORDERED: .625
 THICKNESS RECEIVED: .625
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORROSION	Y	<input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	ASTM A182
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	HEAT # 139624
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	M1018 R. 1.625
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	8009409
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: _____ DATE: _____	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 1018-1025 ROUND BAR

SPECIFICATION: MIL-S-7097 OR ASTM A108

PART NUMBER: M1018-R/D DDD WHERE D DDD = DIAMETER IN INCHES

DIA.

EG. 7/8" ROUND BAR = M1018-R0 875

TOLERANCES: PER ASTM A108 AS FOLLOWS:

SIZE TOLERANCE
UP TO 1.5" INCL. +0.000/-0.002
OVER 1.5" TO 2.5" INCL. +0.000/-0.003
OVER 2.5" TO 4.0" INCL. +0.000/-0.004
OVER 4.0" TO 6.0" INCL. +0.000/-0.005
OVER 6.0" TO 8.0" INCL. +0.000/-0.006

R.1625

RELEASED
2012-09-24

B	REFORMAT. ADD ASTM A108, ADD TOLERANCES	CP	12.09.05
A	NEW ISSUE	DS	01.04.12
REV.	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	CP		
CHECKED	CP		
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	12.09.05		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. M1018-R

TITLE 1018-1025 ROUND BAR

REV. B

SHEET 1 OF 1

SCALE NTS

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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M1018 B.375x5.00

PO / BATCH NO.: 38311/S009408

DATE: 17/11/13

MATERIAL CERT REC'D: yes

THICKNESS ORDERED: .375

QUANTITY RECEIVED: 4

THICKNESS RECEIVED: .375

QUANTITY INSPECTED: 4

SHEET SIZE ORDERED: _____

QUANTITY REJECTED: _____

SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORROSION	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT THICKNESS	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	HEAT # 1161503
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	M1018 B.375x5.00
CORRECT M# ON THE MATERIAL	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	S009408
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>mf</u>	SIGNED OFF BY: _____		
DATE: <u>17/11/13</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



DESIGN 	DRAWN BY 	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED CP	APPROVED 	DRAWING NO. M1010-B	REV. A SHEET 1 OF 1
DATE 01.12.06		TITLE AISI 1010-1025 BAR	SCALE NTS
A	01.12.06	NEW ISSUE	

PURCHASE MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A569/A570
OR CSA G40-21, 38W/44W/50W/60W/70W

PART NUMBER: M1010-B | T.TTT | x | WW.WWW | WHERE T.TTT = THICKNESS (IN INCHES)
THICK WIDTH WW.WWW = WIDTH (IN INCHES)

EG. 0.75" x 2.50" BAR = M1010-B0.750 x 02.500

375 x 5.00

RELEASED
01.12.07

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